APRIL/MAY 2023

GCS22/DCS22 — DESIGN AND ANALYSIS OF ALGORITHM

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is an Algorithm?
2. Define worst case.
3. What is Merge sort?
4. Define Weighted tree.
5. What is Dynamic Programming?
6. Write two lines about Divide and Conquer strategy.
7. What is graph coloring?
8. What is meant by Greedy algorithm?
9. Define Hamiltonian cycles.
10. What is Bin packing?

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SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL the questions.

11. (a) Describe the Time Complexity.

Or

(b) Write short notes on performance measurement.

12. (a) Explain the Binary search in detail.

Or

(b) Elaborate Strassen's Matrix Multiplication algorithm.

13. (a) Explain minimum spanning tree with algorithm.

Or

(b) Discuss the single source shortest path.

14. (a) Describe the Flow shop scheduling.

Or

(b) Explain the sum of subsets in backtracking.

15. (a) Write short notes on Planar graph coloring problem.

Or

(b) Explain the Hamiltonian Path.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain briefly about the Asymptotic notations.

17. Discuss the Components of Greedy Algorithm.

18. Describe briefly on Quick sort with an example.

19. Explain 8 Queens Problem in detail.

20. Discuss the Knapsack problem with an example.
